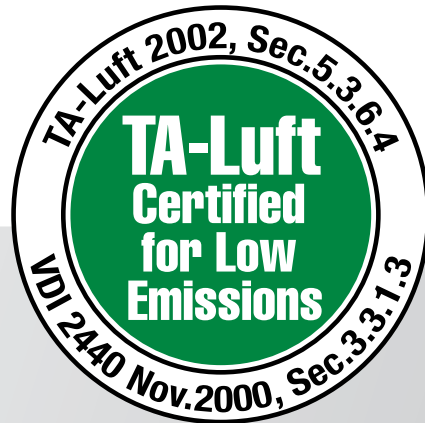


TRIAO®



SERIES 33/43/53 Multi-Port



Series 33/43/53

**3, 4, 5-Way
Direct Mount
Multi-Port Ball Valves
1/4" - 4"**

 **A-T Controls, Inc.**

9955 International Blvd.
Cincinnati, Ohio 45246
www.atcontrols.com

PHONE (513) 247-5465
FAX (513) 247-5462
sales@atcontrols.com



This versatile, high performance multi-port ball valve offers solutions to mixing and diverting with various available flow patterns and end configurations. It can be maintained in-line, leaving the end pieces intact.

The direct mount design makes automation easier and maintains a lower profile. This valve features the pyramidal stem design that is so effective in other Triac valve series. There are a myriad of end piece and flow pattern combinations.

Easy to Automate!

See automated data sheets for pre-sized assemblies



Pneumatic



Electric

SERIES 33/43/53

3, 4 & 5-Way Direct Mount Multi-Port Ball Valves

Sizes 1/4" - 4"

Available in 316SST

Full Port with various Port Arrangements

Pressure Rating by size

1000 psi (1/4"-1")

800 psi (1-1/4"-2")

600 psi (2-1/2"-3")

300 psi (4")

NPT, Socket Weld or Butt Weld Ends (1/4"-4")

150/300# Flanged, Sanitary (1/2"-4)

NACE MR-0175 (optional)

ISO 5211 Actuator Mounting Pad

**Blowout Proof Stem w/ Dual
Anti-Static Devices**

5 Seat Design (RTFE Standard)

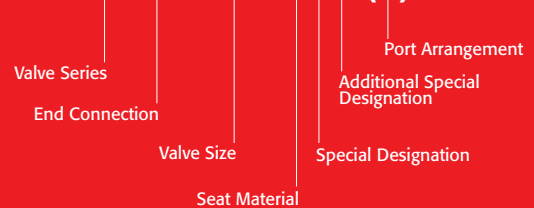
**Pyramidal Stem Seal Packing
System**

Lockable Manual Handle

HOW TO ORDER MANUAL VALVES

SAMPLE PART #

33-TH-0150-XXX-(A)



See part number matrix for itemized options

STANDARDS

Design
End Connections
Flanged Ends
Pressure Testing
Mounting
Safety Integrity
CE Approval
NACE MR0175
Marking System for Valves
Material Certification
Quality Assurance

ANSI/ASME B16.34
 ASME B1.20.1, B16.11, B16.25
 ANSI/ASME B16.5
 API 598
 ISO 5211
 IEC 61508:2010; SIL
 PED 97/23/EC Module H
 (optional)
 ISO 5209
 EN 10204-3.1 MTR
 ISO 9001:2015, CRN Numbers on file

**Valve Model and
 End Connections
 Reference**

SERIES	33	43	53
	3-Way	4-Way	5-Way
NPT	33-TH	43-TH	53-TH
Socket Weld	33-SW	43-SW	53-SW
Butt Weld	33-BW	43-BW	53-BW
Flanged (ANSI Class 150)	33-F1	43-F1	53-F1
Flanged (ANSI Class 300)	33-F3	43-F3	53-F3
Sanitary Clamp	33-SA	43-SA	53-SA
Sanitary Cavity Filled	33-SF	43-SF	53-SF

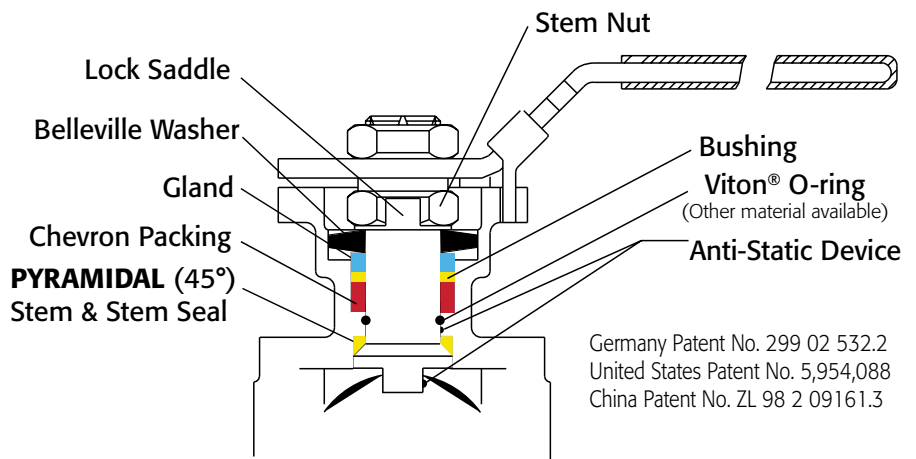
Port Arrangements

L, T, X, & I-Port
 Vertical L (VL) & Vertical T (VT)
 Double TT, Double LL

**Seat Material
 Options**

RTFE (standard)
 PTFE, CTFE, 50/50 STFE, TFM™1600, MG1241, UHMWPE,
 & others

**Pyramidal Stem Seal
 Sealing System**



Germany Patent No. 299 02 532.2
 United States Patent No. 5,954,088
 China Patent No. ZL 98 2 09161.3

TFM™ is a trademark of Dyneon™, a 3M Company.
 Viton® is a registered trademark of E. I. DuPont de Nemours.

Series 33, 43 and 53 Direct Mount Multi-Port 3, 4 and 5-Way Ball Valves offer superior performance and reliability required to optimize manual and automation process performance.



Design Features

Dual Pattern ISO 5211 Mounting Pad with Square Shaft

No bracket and adapter are required for actuator mounting, provides easy and low cost automation with improved cycle life

5-Seat Construction

For equal seat loading and positive sealing at any port, and maintain proper ball alignment

5-Entry Construction

O-Ring Stem Seal

Enhances stem wear and maintains stem alignment

Anti-Static Device

Standard applied stem-to-ball; stem-to-body

Variety of End Connections Available for Options

Stem

- Pyramidal stem packing arrangement provides optimum stem seal and extremely high cycle life
- Super smooth stem surface reduces seal friction and operating torque
- Blowout proof stem prevents stem from blowing out, for maximum safety

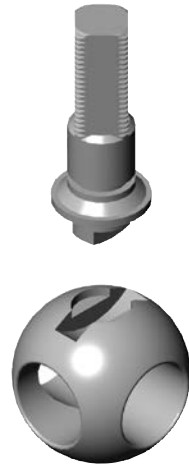
Ball

Precisely machined, solid ball for bubble tight shut-off with less operating torque

Seats

Wide range of seat materials available to suit various applications

Ball and Stem Connections



Semi-Trunnion Ball Design produces a locked ball-to-stem connection offering a positive connection that effectively eliminates backlash and hysteresis. The stem connection ensures accurate, precise positioning of the ball and lower operating torque for better actuation.

End Cap design is separated from seat retainer in two-piece "Easy-to-Maintain" construction



- Designed to overcome the problem of conventional end cap design.
- End caps remove easily from valve body when valves are mounted in pipeline.
- Allows fast and easy replacement of gasket and seats.
- Lowers costs throughout life cycle.

The conventional end cap and seat retainer was a one piece design that made the end caps extend into the valve body, creating a problem when repair and maintenance is required. It is very difficult to remove end caps from the valve body when valves are mounted in line, especially when welded . . . **not true with the Series 33, 43 and 53!**

Series 33, 43 and 53 5-Piece Design Cavity Filled Seats



The cavity filled seats are designed to fill the dead space between the ball and valve body that can contaminate the process. Our cavity filled seats fill 95% of the dead space while competitors' cavity filled seats for multi-port ball valves can only fill a maximum of 80% of the dead space.

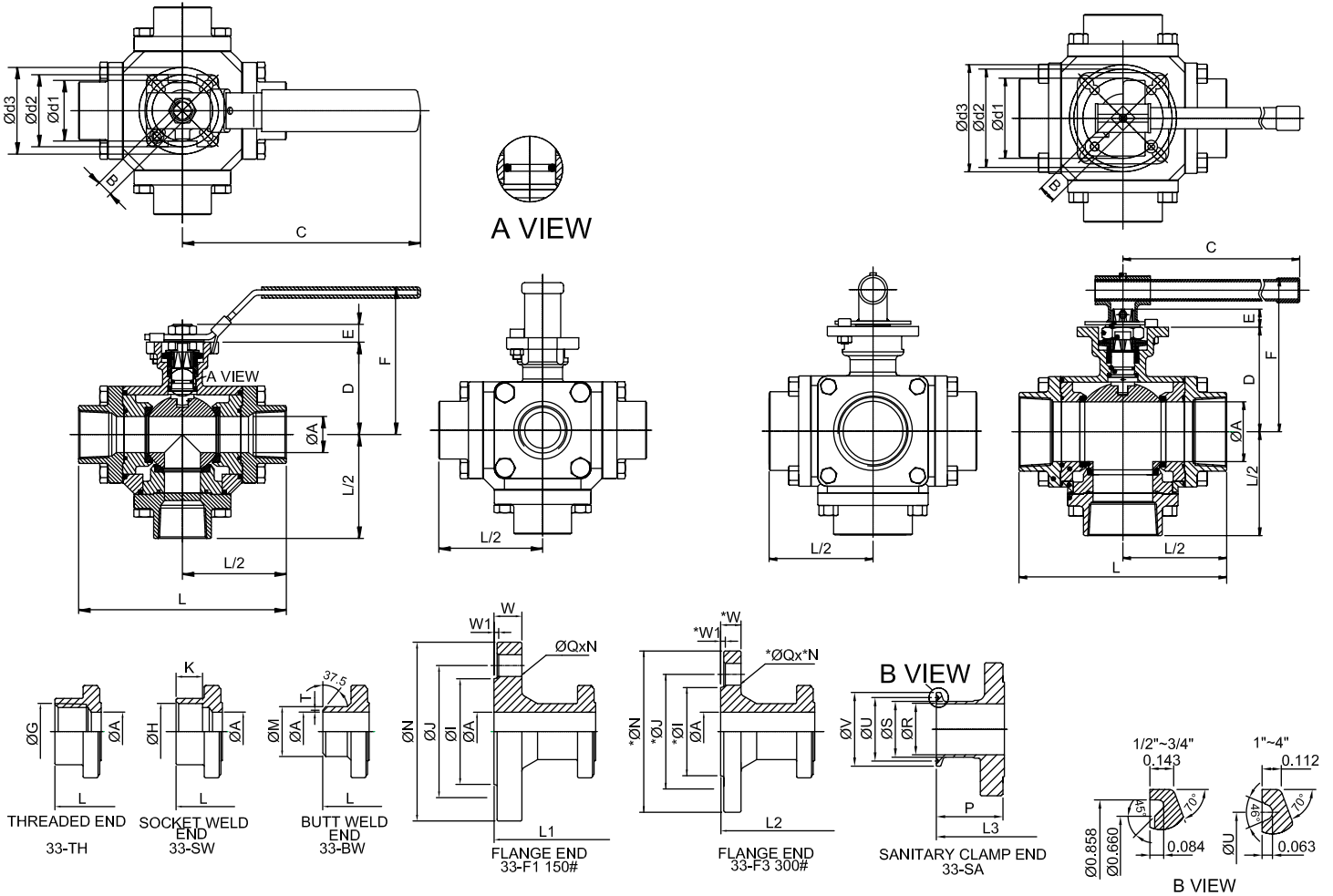
SERIES 33/43/53 Multi-Port Ball Valves

33, 43, 53 Series 3, 4, 5-Way

1/4" - 2-1/2"

Dimensional Drawings

3" - 4"



DIMENSIONS (IN)

SIZE	NPT, SOCKET WELD, & BUTT WELD ENDS													ANSI CLASS 150 FLANGED ENDS									ANSI CLASS 300 FLANGED ENDS									SANITARY CLAMP ENDS								
	$\varnothing G$	$\varnothing H$	K	$\varnothing M$	T	L	LBS.	$\varnothing I$	$\varnothing J$	$\varnothing N$	$\varnothing Q$	N	W1	W	L1	LBS.	* $\varnothing I$	* $\varnothing N$	* $\varnothing J$	* $\varnothing Q$	*N	*W1	*W	L2	LBS.	$\varnothing R$	$\varnothing S$	$\varnothing U$	$\varnothing V$	P	L3	LBS.								
1/4"	0.46	0.354	5.91	1.73	0.35	3.35	1.417	1.654	1.969	0.27	0.27	0.27	F03/F04/F05	1/4" NPT	0.56	0.39	0.64	0.06	3.62	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-						
3/8"	0.50	0.354	5.91	1.73	0.35	3.35	1.417	1.654	1.969	0.27	0.27	0.27	F03/F04/F05	3/8" NPT	0.69	0.39	0.69	0.06	3.62	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
1/2"	0.59	0.354	5.91	1.73	0.35	3.35	1.417	1.654	1.969	0.27	0.27	0.27	F03/F04/F05	1/2" NPT	0.86	0.39	0.89	0.06	3.62	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3/4"	0.79	0.433	6.50	2.13	0.41	3.66	1.654	1.969	-	0.27	0.27	-	F04/F05	3/4" NPT	1.07	0.51	1.08	0.06	4.33	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
1"	0.98	0.433	10.35	2.52	0.41	4.25	1.654	1.969	2.756	0.27	0.27	0.35	F04/F05/F07	1" NPT	1.33	0.51	1.34	0.06	5.67	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
1-1/4"	1.26	0.551	10.35	3.09	0.51	5.00	1.969	2.756	-	0.27	0.35	-	F05/F07	1-1/4" NPT	1.68	0.51	1.68	0.06	5.75	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
1-1/2"	1.50	0.748	10.35	3.74	0.71	5.98	2.756	4.016	-	0.39	0.47	-	F07/F10	1-1/2" NPT	1.93	0.51	1.91	0.06	6.46	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
2"	1.97	0.748	12.32	4.00	0.71	6.26	2.756	4.016	-	0.39	0.47	-	F07/F10	2" NPT	2.41	0.63	2.38	0.06	7.24	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
2-1/2"	2.56	0.748	13.54	4.72	0.71	6.97	2.756	4.016	-	0.39	0.47	-	F07/F10	2-1/2" NPT	3.03	0.63	3.00	0.08	9.29	47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
3"	2.99	0.866	12.48	5.23	0.91	7.68	4.016	4.921	-	0.47	0.55	-	F10/F12	3" NPT	3.54	0.63	3.54	0.08	10.43	64	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
4"	3.94	0.866	20.08	6.46	0.91	8.90	4.016	4.921	-	0.47	0.55	-	F10/F12	4" NPT	4.55	0.79	4.57	0.14	12.60	127	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					

SIZE	ANSI CLASS 150 FLANGED ENDS									ANSI CLASS 300 FLANGED ENDS									SANITARY CLAMP ENDS								
	$\varnothing I$	$\varnothing J$	$\varnothing N$	$\varnothing Q$	N	W1	W	L1	LBS.	* $\varnothing I$	* $\varnothing N$	* $\varnothing J$	* $\varnothing Q$	*N	*W1	*W	L2	LBS.	$\varnothing R$	$\varnothing S$	$\varnothing U$	$\varnothing V$	P	L3	LBS.		
1/4"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3/8"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1/2"	1.38	2.38	3.50	0.63	4	0.06	0.44	5.91	5.55	1.38	3.75	2.62	0.63	4	0.06	0.56	6.30	CF	0.37	0.50	-	0.99	1.17	4.33	3		
3/4"	1.69	2.75	3.88	0.63	4	0.06	0.44	6.89	10.65	1.69	4.62	3.25	0.75	4	0.06	0.62	7.48	CF	0.62	0.75	-	1.00	1.44	5.51	6		
1"	2.00	3.12	4.25	0.63	4	0.06	0.44	8.07	14	2.00	4.88	3.50	0.75	4	0.06	0.69	8.46	20	0.87	1.00	1.71	1.98	1.52	6.30	11		
1-1/4"	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
1-1/2"	2.88	3.88	5.00	0.63	4	0.06	0.56	10.04	32	2.88	6.12	4.50	0.87	4	0.06	0.81	10.63	41	1.37	1.50	1.71	1.99	1.79	7.87	23		
2"	3.62	4.75	6.00	0.75	4	0.06	0.63	11.02	45	3.62	6.50	5.00	0.75	8	0.06	0.88	11.42	60	1.87	2.00	2.20	2.52	1.95	8.66	30		
2-1/2"	4.12	5.50	7.00	0.75	4	0.06	0.69	12.80	68	4.12	7.50	5.88	0.87	8	0.06	1.00	13.39	CF	2.37	2.50	2.78	3.05	1.85	9.45	47		
3"	5.00	6.00	7.50	0.75	4	0.06	0.75	13.58	88	5.00	8.25	6.62	0.87	8	0.06	1.12	CF	CF	2.87	3.00	3.28	3.58	2.10	10.43	61		
4"	6.19	7.50	9.00	0.75	8	0.06	0.94	15.98	166	6.19	10.0	7.88	0.87	8	0.06	1.25	CF	CF	3.83	4.00	4.34	4.68	2.11	12.60	124		

Bill of Materials 33/43/53 Series

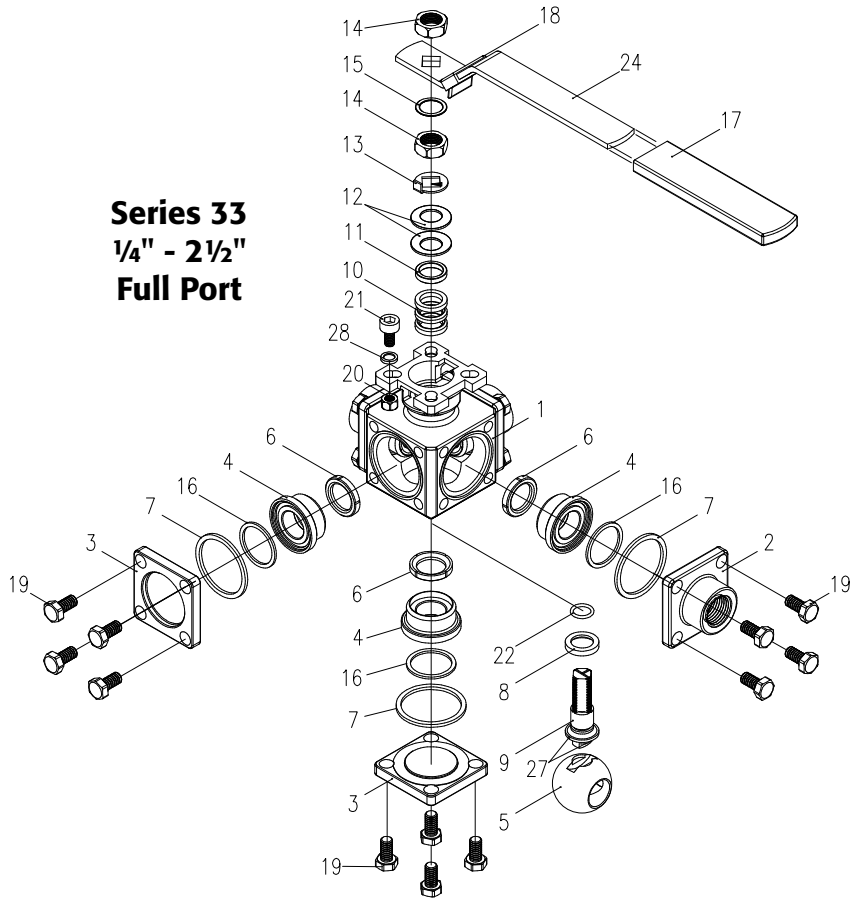
MATERIALS LIST

NO.	PART NAME	QTY	MATERIAL	MATERIAL
1	BODY	1	ASTM A351 GRADE CF8M	ASTM A216 GRADE WCB
2	END CAP	*	ASTM A351 GRADE CF8M	ASTM A216 GRADE WCB
3	BLIND	*	ASTM A351 GRADE CF8M	ASTM A216 GRADE WCB
4	SEAT RETAINER	5	ASTM A351 GRADE CF8M	ASTM A351 GRADE CF8M
5	BALL	1	1/4" THRU 3/8" ASTM A276 SS316	1/4" THRU 3/8" ASTM A276 SS316
5	BALL	1	1/2" THRU 4" ASTM A351 GRADE CF8M	1/2" THRU 4" ASTM A351 GRADE CF8M
6	SEAT	5	RTFE	RTFE
7	JOINT GASKET	5	PTFE	PTFE
8	STEM SEAL	1	PTFE	PTFE
9	STEM	1	ASTM A276 SS316	ASTM A276 SS316
10	GLAND PACKING	1 SET	PTFE	PTFE
11	GLAND BUSHING	1	AISI 304	AISI 304
12	BELLEVILLE WASHER	2	AISI 301	AISI 301
13	LOCK SADDLE	1	AISI 304	AISI 304
14	STEM NUT	**	AISI 304	AISI 304
15	STEM WASHER	1	AISI 304	AISI 304
16	RETAINER SEAL	5	PTFE	PTFE
17	HANDLE SLEEVE	1	VINYL	VINYL
18	LOCKING DEVICE	1	AISI 304	AISI 304
19	BOLT	20	ISO 3506-1 A2-70	ISO 3506-1 A2-70
20	PIN NUT	1	AISI 304	AISI 304
21	STOP PIN	1	AISI 304	AISI 304
22	O-RING	1	VITON®	VITON®
23	LOCKING PLATE	1	AISI 304	AISI 304
24	HANDLE	1	AISI 304	AISI 304
25	HANDLE HUB	1	AISI 304	AISI 304
26	HANDLE NUT	2	AISI 304	AISI 304
27	ANTI-STATIC DEVICE	1	AISI 316	AISI 316
28	WASHER	1	AISI 304	AISI 304

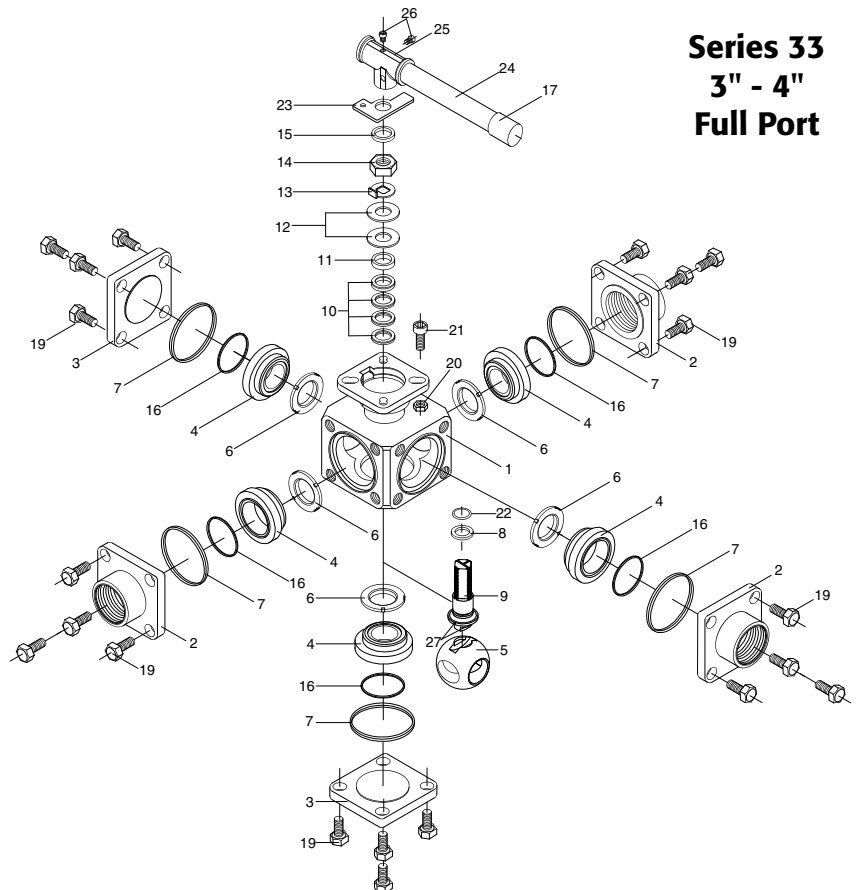
*FOR 33 SERIES: QTY 3 END CAP-A, QTY 2 END CAP-B
 *FOR 43 SERIES: QTY 4 END CAP-A, QTY 1 END CAP-B
 *FOR 53 SERIES: QTY 5 END CAP-A, QTY 0 END CAP-B

**FOR 1/4"-2-1/2": QTY 2
 **FOR 3"-4": QTY 1

Series 33 1/4" - 2 1/2" Full Port

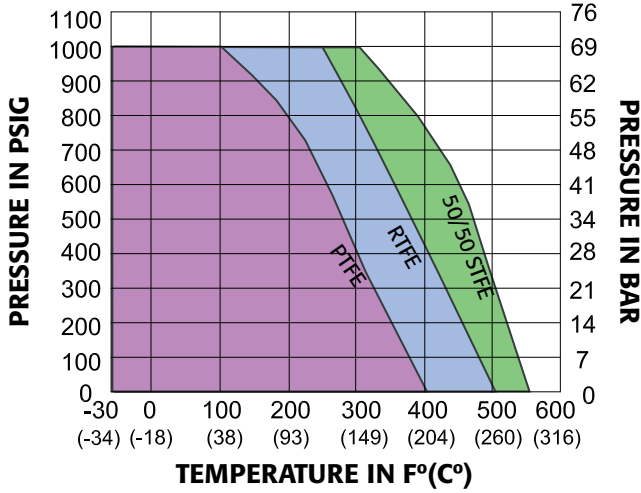


Series 33 3" - 4" Full Port

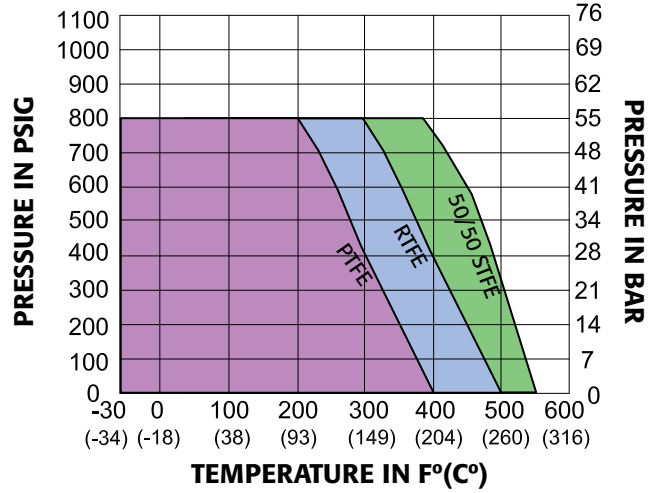


**Technical Data
Information**

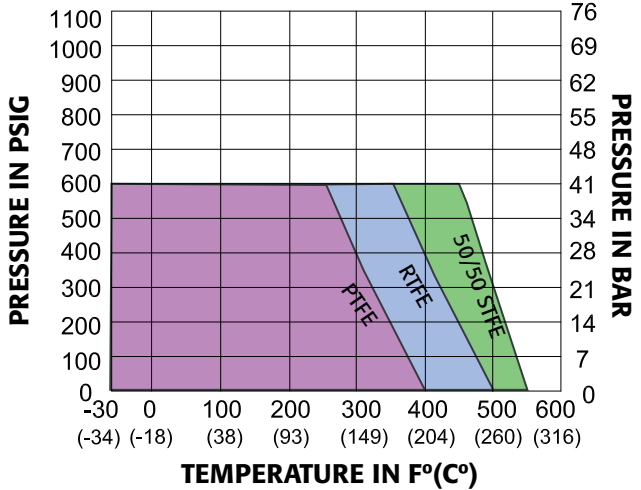
**PRESSURE VS. TEMPERATURE
FOR VALVE 1/4"– 1"**



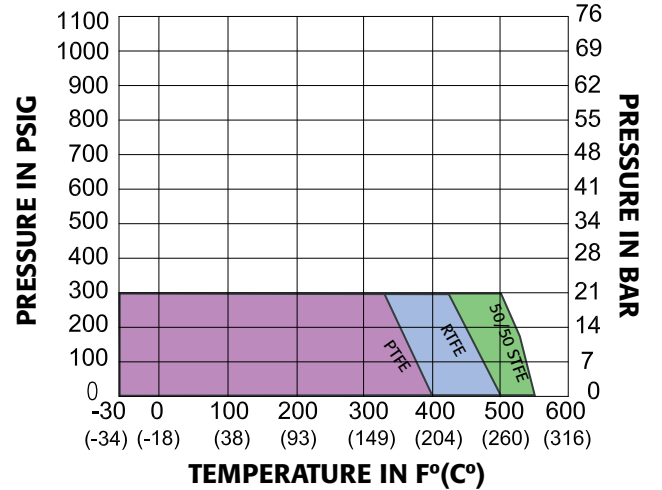
**PRESSURE VS. TEMPERATURE
FOR VALVE 1-1/4"– 2"**



**PRESSURE VS. TEMPERATURE
FOR VALVE 2-1/2"– 3"**



**PRESSURE VS. TEMPERATURE
FOR VALVE 4"**



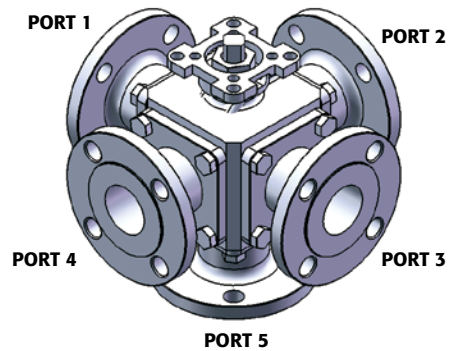
VALVE SIZE	Cv Flow Coefficients					
	L-Port	T-Port Through	T-Port Branch	LL-Port Horizontal	LL-Port Vertical	VL-Port
1/4"	4	7	4	3	3	4
3/8"	5	9	4	4	4	5
1/2"	6	10	5	6	5	6
3/4"	16	21	13	15	13	16
1"	31	36	22	27	30	31
1-1/4"	32	58	25	28	33	32
1-1/2"	75	90	55	65	75	75
2"	140	175	100	120	145	140
2-1/2"	210	235	149	175	220	210
3"	375	450	270	300	375	375
4"	670	800	475	353	675	670

Break Away Torque for RTFE Seats	
SIZE	IN-LBS
1/4"	91
3/8"	91
1/2"	91
3/4"	195
1"	414
1-1/4"	483
1-1/2"	780
2"	1,079
2-1/2"	1,547
3"	2,275
4"	2,860

NOTE: For other seat material, consult factory

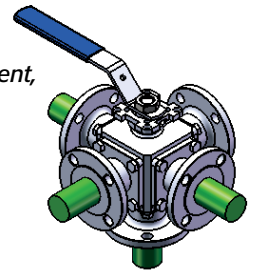
Flow Patterns

3-WAY (33 SERIES)		POSITION			
PORT	Arrangement	1	2	3	4
L	L				
LL	M				
LL	N				
VL	O				
VL	P				
T	T				
TT	U				
TT	S				
VT	V				
VT	W				



EXAMPLE: A Series 53 (5-way) valve specified with a **TT** port and **U** arrangement in ball **Position 1** will have flow paths open at **Ports 1, 3, 4, and 5**.

53 Series
TT Port, U Arrangement,
Shown in Position 1



4-WAY (43 SERIES)		POSITION			
PORT	Arrangement	1	2	3	4
I	I				
L	L				
LL	M				
VL	O				
T	T				
TT	U				
VT	V				
X	X				

Flow Patterns

5-WAY (53 SERIES)		POSITION			
PORT	ARRANGEMENT	1	2	3	4
LL	M				
VL	O				
TT	U				
VT	V				

How to order:

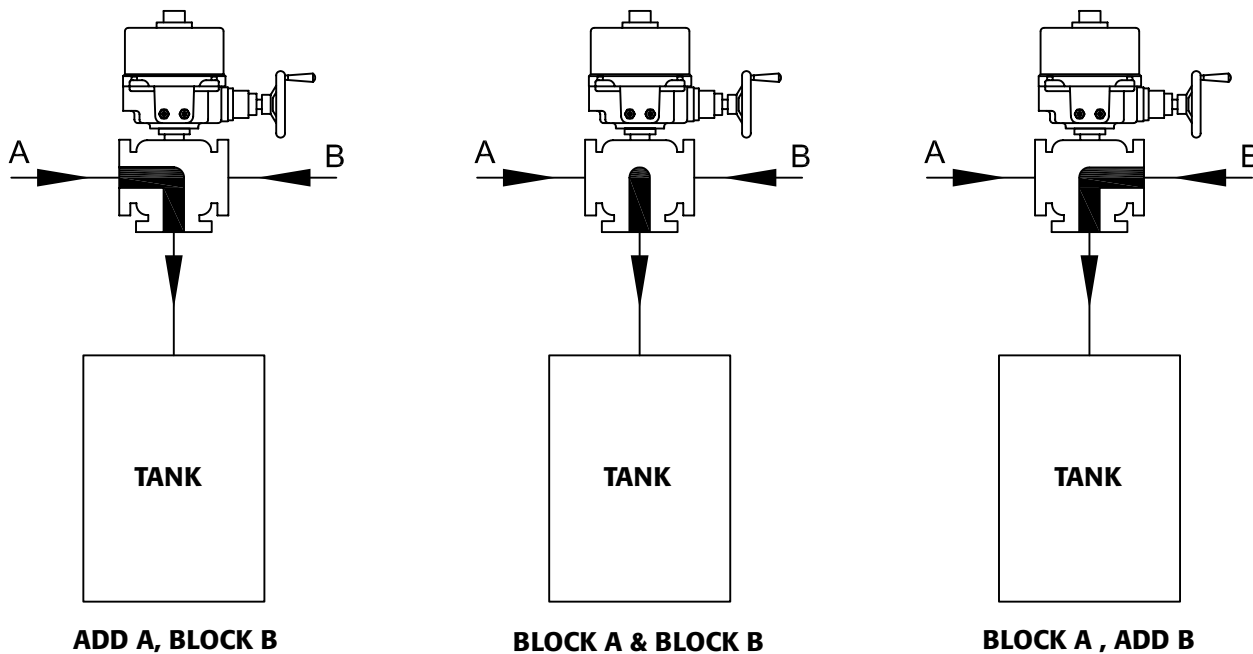
Specify arrangement in part number. Then specify position number for deenergized to energized position.

Example:

- 1) 33-F1-300/2R7S-AA-M, Position 2 (Deenergized) to Position 1 (Energized),
3" 3-Way 150# Flange "LL-Port" Arrangement M, Valve fails to right port w/ solenoid and limit switch
- 2) 33-F1-200/TEE2-BX-O
2" 3-Way, 180° Vertical "L-Port" Arrangement O, w/3-Position Electric Actuator, 120VAC - See Figure 1

Vertical "L" Flow Example

FIGURE 1



3-POSITION 3-WAY BALL VALVE WITH VERTICAL L-PORT (ARRANGEMENT O)

Series 33

Threaded, Socket Weld and Butt Weld

Automated Model numbers

**3-Way
Double Acting**

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	33-TX-025/TR1D-XX-(*	1/4"	33-TX-025/2R2D-XX-(*
3/8"	33-TX-038/TR1D-XX-(*	3/8"	33-TX-038/2R2D-XX-(*
1/2"	33-TX-050/2R2D-XX-(*	1/2"	33-TX-050/2R2D-XX-(*
3/4"	33-TX-075/2R2D-XX-(*	3/4"	33-TX-075/2R3D-XX-(*
1"	33-TX-100/2R2D-XX-(*	1"	33-TX-100/2R3D-XX-(*
1-1/4"	33-TX-125/2R3D-XX-(*	1-1/4"	33-TX-125/2R4D-XX-(*
1-1/2"	33-TX-150/2R4D-XX-(*	1-1/2"	33-TX-150/2R4D-XX-(*
2"	33-TX-200/2R5D-XX-(*	2"	33-TX-200/2R5D-XX-(*
2-1/2"	33-TX-250/2R5D-XX-(*	2-1/2"	33-TX-250/2R6D-XX-(*
3"	33-TX-300/2R6D-XX-(*	3"	33-TX-300/2R7D-XX-(*
4"	33-TX-400/2R7D-XX-(*	4"	33-TX-400/2R8D-XX-(*

**3-Way
Spring Return**

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	33-TX-025/2R2S-XX-(*	1/4"	33-TX-025/2R3S-XX-(*
3/8"	33-TX-038/2R2S-XX-(*	3/8"	33-TX-038/2R3S-XX-(*
1/2"	33-TX-050/2R2S-XX-(*	1/2"	33-TX-050/2R3S-XX-(*
3/4"	33-TX-075/2R3S-XX-(*	3/4"	33-TX-075/2R4S-XX-(*
1"	33-TX-100/2R4S-XX-(*	1"	33-TX-100/2R4S-XX-(*
1-1/4"	33-TX-125/2R4S-XX-(*	1-1/4"	33-TX-125/2R5S-XX-(*
1-1/2"	33-TX-150/2R6S-XX-(*	1-1/2"	33-TX-150/2R6S-XX-(*
2"	33-TX-200/2R6S-XX-(*	2"	33-TX-200/2R7S-XX-(*
2-1/2"	33-TX-250/2R6S-XX-(*	2-1/2"	33-TX-250/2R7S-XX-(*
3"	33-TX-300/2R8S-XX-(*	3"	33-TX-300/2R8S-XX-(*
4"	33-TX-400/2R9S-XX-(*	4"	33-TX-400/2R0S-XX-(*

**3-Way
Electric**

On-Off		Modulating	
SIZE	MODEL	SIZE	MODEL
1/4"	33-TX-025/WEA1-XX-(*	1/4"	33-TX-025/WEA2-XX-(*
3/8"	33-TX-038/WEA1-XX-(*	3/8"	33-TX-038/WEA2-XX-(*
1/2"	33-TX-050/WEA1-XX-(*	1/2"	33-TX-050/WEA2-XX-(*
3/4"	33-TX-075/WEA1-XX-(*	3/4"	33-TX-075/WEA2-XX-(*
1"	33-TX-100/WEA1-XX-(*	1"	33-TX-100/WEA2-XX-(*
1-1/4"	33-TX-125/WEB1-XX-(*	1-1/4"	33-TX-125/WEB2-XX-(*
1-1/2"	33-TX-150/WEC1-XX-(*	1-1/2"	33-TX-150/WEC2-XX-(*
2"	33-TX-200/WED1-XX-(*	2"	33-TX-200/WED2-XX-(*
2-1/2"	33-TX-250/WEE1-XX-(*	2-1/2"	33-TX-250/WEE2-XX-(*
3"	33-TX-300/WEE1-XX-(*	3"	33-TX-300/WEE2-XX-(*
4"	33-TX-400/WEF1-XX-(*	4"	33-TX-400/WEF2-XX-(*

* Port Arrangement designation: See page 8 for options

Series 33

Flanged - ANSI Class 150

Automated Model numbers

3-Way Double Acting

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	33-F1-050/2R2D-XX-(*)	1/2"	33-F1-050/2R2D-XX-(*)
3/4"	33-F1-075/2R2D-XX-(*)	3/4"	33-F1-075/2R3D-XX-(*)
1"	33-F1-100/2R2D-XX-(*)	1"	33-F1-100/2R3D-XX-(*)
1-1/2"	33-F1-150/2R4D-XX-(*)	1-1/2"	33-F1-150/2R4D-XX-(*)
2"	33-F1-200/2R5D-XX-(*)	2"	33-F1-200/2R5D-XX-(*)
2-1/2"	33-F1-250/2R5D-XX-(*)	2-1/2"	33-F1-250/2R6D-XX-(*)
3"	33-F1-300/2R6D-XX-(*)	3"	33-F1-300/2R7D-XX-(*)
4"	33-F1-400/2R7D-XX-(*)	4"	33-F1-400/2R8D-XX-(*)

3-Way Spring Return

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	33-F1-050/2R2S-XX-(*)	1/2"	33-F1-050/2R3S-XX-(*)
3/4"	33-F1-075/2R3S-XX-(*)	3/4"	33-F1-075/2R4S-XX-(*)
1"	33-F1-100/2R4S-XX-(*)	1"	33-F1-100/2R4S-XX-(*)
1-1/2"	33-F1-150/2R6S-XX-(*)	1-1/2"	33-F1-150/2R6S-XX-(*)
2"	33-F1-200/2R6S-XX-(*)	2"	33-F1-200/2R7S-XX-(*)
2-1/2"	33-F1-250/2R6S-XX-(*)	2-1/2"	33-F1-250/2R7S-XX-(*)
3"	33-F1-300/2R8S-XX-(*)	3"	33-F1-300/2R8S-XX-(*)
4"	33-F1-400/2R9S-XX-(*)	4"	33-F1-400/2R0S-XX-(*)

3-Way Electric

On-Off		Modulating	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	33-F1-050/WEA1-XX-(*)	1/2"	33-F1-050/WEA2-XX-(*)
3/4"	33-F1-075/WEA1-XX-(*)	3/4"	33-F1-075/WEA2-XX-(*)
1"	33-F1-100/WEA1-XX-(*)	1"	33-F1-100/WEA2-XX-(*)
1-1/2"	33-F1-150/WEC1-XX-(*)	1-1/2"	33-F1-150/WEC2-XX-(*)
2"	33-F1-200/WED1-XX-(*)	2"	33-F1-200/WED2-XX-(*)
2-1/2"	33-F1-250/WEE1-XX-(*)	2-1/2"	33-F1-250/WEE2-XX-(*)
3"	33-F1-300/WEE1-XX-(*)	3"	33-F1-300/WEE2-XX-(*)
4"	33-F1-400/WEF1-XX-(*)	4"	33-F1-400/WEF2-XX-(*)

* Port Arrangement designation: See page 8 for options

Series 33

Non-Cavity Filled Sanitary

Automated Model numbers

**3-Way
Double Acting**

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	33-C1-050/2R2D-XX-(*)	1/2"	33-C1-050/2R2D-XX-(*)
3/4"	33-C1-075/2R2D-XX-(*)	3/4"	33-C1-075/2R3D-XX-(*)
1"	33-C1-100/2R2D-XX-(*)	1"	33-C1-100/2R3D-XX-(*)
1-1/2"	33-C1-150/2R4D-XX-(*)	1-1/2"	33-C1-150/2R4D-XX-(*)
2"	33-C1-200/2R5D-XX-(*)	2"	33-C1-200/2R5D-XX-(*)
2-1/2"	33-C1-250/2R5D-XX-(*)	2-1/2"	33-C1-250/2R6D-XX-(*)
3"	33-C1-300/2R6D-XX-(*)	3"	33-C1-300/2R7D-XX-(*)
4"	33-C1-400/2R7D-XX-(*)	4"	33-C1-400/2R8D-XX-(*)

**3-Way
Spring Return**

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	33-C1-050/2R2S-XX-(*)	1/2"	33-C1-050/2R3S-XX-(*)
3/4"	33-C1-075/2R3S-XX-(*)	3/4"	33-C1-075/2R4S-XX-(*)
1"	33-C1-100/2R4S-XX-(*)	1"	33-C1-100/2R4S-XX-(*)
1-1/2"	33-C1-150/2R6S-XX-(*)	1-1/2"	33-C1-150/2R6S-XX-(*)
2"	33-C1-200/2R6S-XX-(*)	2"	33-C1-200/2R7S-XX-(*)
2-1/2"	33-C1-250/2R6S-XX-(*)	2-1/2"	33-C1-250/2R7S-XX-(*)
3"	33-C1-300/2R8S-XX-(*)	3"	33-C1-300/2R8S-XX-(*)
4"	33-C1-400/2R9S-XX-(*)	4"	33-C1-400/2R0S-XX-(*)

**3-Way
Electric**

On-Off		Modulating	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	33-C1-050/WEA1-XX-(*)	1/2"	33-C1-050/WEA2-XX-(*)
3/4"	33-C1-075/WEA1-XX-(*)	3/4"	33-C1-075/WEA2-XX-(*)
1"	33-C1-100/WEA1-XX-(*)	1"	33-C1-100/WEA2-XX-(*)
1-1/2"	33-C1-150/WEC1-XX-(*)	1-1/2"	33-C1-150/WEC2-XX-(*)
2"	33-C1-200/WED1-XX-(*)	2"	33-C1-200/WED2-XX-(*)
2-1/2"	33-C1-250/WEE1-XX-(*)	2-1/2"	33-C1-250/WEE2-XX-(*)
3"	33-C1-300/WEE1-XX-(*)	3"	33-C1-300/WEE2-XX-(*)
4"	33-C1-400/WEF1-XX-(*)	4"	33-C1-400/WEF2-XX-(*)

* Port Arrangement designation: See page 8 for options

Series 33

Cavity Filled - Threaded, Socket Weld, & Butt Weld

Automated Model numbers

3-Way Double Acting

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	33-TF-025/2R2D-XX-(*)	1/4"	CF
3/8"	33-TF-038/2R2D-XX-(*)	3/8"	CF
1/2"	33-TF-050/2R2D-XX-(*)	1/2"	CF
3/4"	33-TF-075/2R3D-XX-(*)	3/4"	CF
1"	33-TF-100/2R3D-XX-(*)	1"	CF
1-1/2"	33-TF-150/2R5D-XX-(*)	1-1/2"	CF
2"	33-TF-200/2R6D-XX-(*)	2"	CF
2-1/2"	33-TF-250/2R6D-XX-(*)	2-1/2"	CF
3"	33-TF-300/2R7D-XX-(*)	3"	CF
4"	33-TF-400/2R8D-XX-(*)	4"	CF

3-Way Spring Return

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	33-TF-025/2R3S-XX-(*)	1/4"	CF
3/8"	33-TF-038/2R3S-XX-(*)	3/8"	CF
1/2"	33-TF-050/2R3S-XX-(*)	1/2"	CF
3/4"	33-TF-075/2R4S-XX-(*)	3/4"	CF
1"	33-TF-100/2R5S-XX-(*)	1"	CF
1-1/2"	33-TF-150/2R7S-XX-(*)	1-1/2"	CF
2"	33-TF-200/2R8S-XX-(*)	2"	CF
2-1/2"	33-TF-250/2R8S-XX-(*)	2-1/2"	CF
3"	33-TF-300/2R9S-XX-(*)	3"	CF
4"	33-TF-400/2R0S-XX-(*)	4"	CF

3-Way Electric

On-Off		Modulating	
SIZE	MODEL	SIZE	MODEL
1/4"	33-TF-025/WEA1-XX-(*)	1/4"	33-TF-025/WEA2-XX-(*)
3/8"	33-TF-038/WEA1-XX-(*)	3/8"	33-TF-038/WEA2-XX-(*)
1/2"	33-TF-050/WEA1-XX-(*)	1/2"	33-TF-050/WEA2-XX-(*)
3/4"	33-TF-075/WEA1-XX-(*)	3/4"	33-TF-075/WEA2-XX-(*)
1"	33-TF-100/WEB1-XX-(*)	1"	33-TF-100/WEB2-XX-(*)
1-1/2"	33-TF-150/WED1-XX-(*)	1-1/2"	33-TF-150/WED2-XX-(*)
2"	33-TF-200/WEE1-XX-(*)	2"	33-TF-200/WEE2-XX-(*)
2-1/2"	33-TF-250/WEE1-XX-(*)	2-1/2"	33-TF-250/WEE2-XX-(*)
3"	33-TF-300/WEF1-XX-(*)	3"	33-TF-300/WEF2-XX-(*)
4"	33-TF-400/WEF1-XX-(*)	4"	33-TF-400/WEF2-XX-(*)

* Port Arrangement designation: See page 8 for options

Series 33

Cavity Filled Flanged - ANSI Class 150

Automated Model numbers

**3-Way
Double Acting**

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	33-FF-050/2R2D-XX-(*)	1/2"	CF
3/4"	33-FF-075/2R3D-XX-(*)	3/4"	CF
1"	33-FF-100/2R3D-XX-(*)	1"	CF
1-1/2"	33-FF-150/2R5D-XX-(*)	1-1/2"	CF
2"	33-FF-200/2R6D-XX-(*)	2"	CF
2-1/2"	33-FF-250/2R6D-XX-(*)	2-1/2"	CF
3"	33-FF-300/2R7D-XX-(*)	3"	CF
4"	33-FF-400/2R8D-XX-(*)	4"	CF

**3-Way
Spring Return**

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	33-FF-050/2R3S-XX-(*)	1/2"	CF
3/4"	33-FF-075/2R4S-XX-(*)	3/4"	CF
1"	33-FF-100/2R5S-XX-(*)	1"	CF
1-1/2"	33-FF-150/2R7S-XX-(*)	1-1/2"	CF
2"	33-FF-200/2R8S-XX-(*)	2"	CF
2-1/2"	33-FF-250/2R8S-XX-(*)	2-1/2"	CF
3"	33-FF-300/2R9S-XX-(*)	3"	CF
4"	33-FF-400/2R0S-XX-(*)	4"	CF

**3-Way
Electric**

On-Off		Modulating	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	33-FF-050/WEA1-XX-(*)	1/2"	33-FF-050/WEA2-XX-(*)
3/4"	33-FF-075/WEA1-XX-(*)	3/4"	33-FF-075/WEA2-XX-(*)
1"	33-FF-100/WEB1-XX-(*)	1"	33-FF-100/WEB2-XX-(*)
1-1/2"	33-FF-150/WED1-XX-(*)	1-1/2"	33-FF-150/WED2-XX-(*)
2"	33-FF-200/WEE1-XX-(*)	2"	33-FF-200/WEE2-XX-(*)
2-1/2"	33-FF-250/WEE1-XX-(*)	2-1/2"	33-FF-250/WEE2-XX-(*)
3"	33-FF-300/WEF1-XX-(*)	3"	33-FF-300/WEF2-XX-(*)
4"	33-FF-400/WEF1-XX-(*)	4"	33-FF-400/WEF2-XX-(*)

* Port Arrangement designation: See page 8 for options

Series 33

Cavity Filled Sanitary

Automated Model numbers

3-Way Double Acting

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	33-CF-050/2R2D-XX-(*)	1/2"	CF
3/4"	33-CF-075/2R3D-XX-(*)	3/4"	CF
1"	33-CF-100/2R3D-XX-(*)	1"	CF
1-1/2"	33-CF-150/2R5D-XX-(*)	1-1/2"	CF
2"	33-CF-200/2R6D-XX-(*)	2"	CF
2-1/2"	33-CF-250/2R6D-XX-(*)	2-1/2"	CF
3"	33-CF-300/2R7D-XX-(*)	3"	CF
4"	33-CF-400/2R8D-XX-(*)	4"	CF

3-Way Spring Return

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	33-CF-050/2R3S-XX-(*)	1/2"	CF
3/4"	33-CF-075/2R4S-XX-(*)	3/4"	CF
1"	33-CF-100/2R5S-XX-(*)	1"	CF
1-1/2"	33-CF-150/2R7S-XX-(*)	1-1/2"	CF
2"	33-CF-200/2R8S-XX-(*)	2"	CF
2-1/2"	33-CF-250/2R8S-XX-(*)	2-1/2"	CF
3"	33-CF-300/2R9S-XX-(*)	3"	CF
4"	33-CF-400/2R0S-XX-(*)	4"	CF

3-Way Electric

On-Off		Modulating	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	33-CF-050/WEA1-XX-(*)	1/2"	33-CF-050/WEA2-XX-(*)
3/4"	33-CF-075/WEA1-XX-(*)	3/4"	33-CF-075/WEA2-XX-(*)
1"	33-CF-100/WEB1-XX-(*)	1"	33-CF-100/WEB2-XX-(*)
1-1/2"	33-CF-150/WED1-XX-(*)	1-1/2"	33-CF-150/WED2-XX-(*)
2"	33-CF-200/WEE1-XX-(*)	2"	33-CF-200/WEE2-XX-(*)
2-1/2"	33-CF-250/WEE1-XX-(*)	2-1/2"	33-CF-250/WEE2-XX-(*)
3"	33-CF-300/WEF1-XX-(*)	3"	33-CF-300/WEF2-XX-(*)
4"	33-CF-400/WEF1-XX-(*)	4"	33-CF-400/WEF2-XX-(*)

* Port Arrangement designation: See page 8 for options

Series 43

Threaded, Socket Weld and Butt Weld

Automated Model numbers

4-Way Double Acting

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	43-TX-025/TR1D-XX-(*)	1/4"	43-TX-025/2R2D-XX-(*)
3/8"	43-TX-038/TR1D-XX-(*)	3/8"	43-TX-038/2R2D-XX-(*)
1/2"	43-TX-050/2R2D-XX-(*)	1/2"	43-TX-050/2R2D-XX-(*)
3/4"	43-TX-075/2R2D-XX-(*)	3/4"	43-TX-075/2R3D-XX-(*)
1"	43-TX-100/2R2D-XX-(*)	1"	43-TX-100/2R3D-XX-(*)
1-1/4"	43-TX-125/2R3D-XX-(*)	1-1/4"	43-TX-125/2R4D-XX-(*)
1-1/2"	43-TX-150/2R4D-XX-(*)	1-1/2"	43-TX-150/2R4D-XX-(*)
2"	43-TX-200/2R5D-XX-(*)	2"	43-TX-200/2R5D-XX-(*)
2-1/2"	43-TX-250/2R5D-XX-(*)	2-1/2"	43-TX-250/2R6D-XX-(*)
3"	43-TX-300/2R6D-XX-(*)	3"	43-TX-300/2R7D-XX-(*)
4"	43-TX-400/2R7D-XX-(*)	4"	43-TX-400/2R8D-XX-(*)

4-Way Spring Return

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	43-TX-025/2R2S-XX-(*)	1/4"	43-TX-025/2R3S-XX-(*)
3/8"	43-TX-038/2R2S-XX-(*)	3/8"	43-TX-038/2R3S-XX-(*)
1/2"	43-TX-050/2R2S-XX-(*)	1/2"	43-TX-050/2R3S-XX-(*)
3/4"	43-TX-075/2R3S-XX-(*)	3/4"	43-TX-075/2R4S-XX-(*)
1"	43-TX-100/2R4S-XX-(*)	1"	43-TX-100/2R4S-XX-(*)
1-1/4"	43-TX-125/2R4S-XX-(*)	1-1/4"	43-TX-125/2R5S-XX-(*)
1-1/2"	43-TX-150/2R6S-XX-(*)	1-1/2"	43-TX-150/2R6S-XX-(*)
2"	43-TX-200/2R6S-XX-(*)	2"	43-TX-200/2R7S-XX-(*)
2-1/2"	43-TX-250/2R6S-XX-(*)	2-1/2"	43-TX-250/2R7S-XX-(*)
3"	43-TX-300/2R8S-XX-(*)	3"	43-TX-300/2R8S-XX-(*)
4"	43-TX-400/2R9S-XX-(*)	4"	43-TX-400/2R0S-XX-(*)

4-Way Electric

On-Off		Modulating	
SIZE	MODEL	SIZE	MODEL
1/4"	43-TX-025/WEA1-XX-(*)	1/4"	43-TX-025/WEA2-XX-(*)
3/8"	43-TX-038/WEA1-XX-(*)	3/8"	43-TX-038/WEA2-XX-(*)
1/2"	43-TX-050/WEA1-XX-(*)	1/2"	43-TX-050/WEA2-XX-(*)
3/4"	43-TX-075/WEA1-XX-(*)	3/4"	43-TX-075/WEA2-XX-(*)
1"	43-TX-100/WEA1-XX-(*)	1"	43-TX-100/WEA2-XX-(*)
1-1/4"	43-TX-125/WEB1-XX-(*)	1-1/4"	43-TX-125/WEB2-XX-(*)
1-1/2"	43-TX-150/WEC1-XX-(*)	1-1/2"	43-TX-150/WEC2-XX-(*)
2"	43-TX-200/WED1-XX-(*)	2"	43-TX-200/WED2-XX-(*)
2-1/2"	43-TX-250/WEE1-XX-(*)	2-1/2"	43-TX-250/WEE2-XX-(*)
3"	43-TX-300/WEF1-XX-(*)	3"	43-TX-300/WEF2-XX-(*)
4"	43-TX-400/WEF1-XX-(*)	4"	43-TX-400/WEF2-XX-(*)

* Port Arrangement designation: See page 8 for options

Series 43

Flanged - ANSI Class 150

Automated Model numbers

4-Way Double Acting

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	43-F1-050/2R2D-XX-(*)	1/2"	43-F1-050/2R2D-XX-(*)
3/4"	43-F1-075/2R2D-XX-(*)	3/4"	43-F1-075/2R3D-XX-(*)
1"	43-F1-100/2R2D-XX-(*)	1"	43-F1-100/2R3D-XX-(*)
1-1/2"	43-F1-150/2R4D-XX-(*)	1-1/2"	43-F1-150/2R4D-XX-(*)
2"	43-F1-200/2R5D-XX-(*)	2"	43-F1-200/2R5D-XX-(*)
2-1/2"	43-F1-250/2R5D-XX-(*)	2-1/2"	43-F1-250/2R6D-XX-(*)
3"	43-F1-300/2R6D-XX-(*)	3"	43-F1-300/2R7D-XX-(*)
4"	43-F1-400/2R7D-XX-(*)	4"	43-F1-400/2R8D-XX-(*)

4-Way Spring Return

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	43-F1-050/2R2S-XX-(*)	1/2"	43-F1-050/2R3S-XX-(*)
3/4"	43-F1-075/2R3S-XX-(*)	3/4"	43-F1-075/2R4S-XX-(*)
1"	43-F1-100/2R4S-XX-(*)	1"	43-F1-100/2R4S-XX-(*)
1-1/2"	43-F1-150/2R6S-XX-(*)	1-1/2"	43-F1-150/2R6S-XX-(*)
2"	43-F1-200/2R6S-XX-(*)	2"	43-F1-200/2R7S-XX-(*)
2-1/2"	43-F1-250/2R6S-XX-(*)	2-1/2"	43-F1-250/2R7S-XX-(*)
3"	43-F1-300/2R8S-XX-(*)	3"	43-F1-300/2R8S-XX-(*)
4"	43-F1-400/2R9S-XX-(*)	4"	43-F1-400/2R0S-XX-(*)

4-Way Electric

On-Off		Modulating	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	43-F1-050/WEA1-XX-(*)	1/2"	43-F1-050/WEA2-XX-(*)
3/4"	43-F1-075/WEA1-XX-(*)	3/4"	43-F1-075/WEA2-XX-(*)
1"	43-F1-100/WEA1-XX-(*)	1"	43-F1-100/WEA2-XX-(*)
1-1/2"	43-F1-150/WEC1-XX-(*)	1-1/2"	43-F1-150/WEC2-XX-(*)
2"	43-F1-200/WED1-XX-(*)	2"	43-F1-200/WED2-XX-(*)
2-1/2"	43-F1-250/WEE1-XX-(*)	2-1/2"	43-F1-250/WEE2-XX-(*)
3"	43-F1-300/WEE1-XX-(*)	3"	43-F1-300/WEE2-XX-(*)
4"	43-F1-400/WEF1-XX-(*)	4"	43-F1-400/WEF2-XX-(*)

* Port Arrangement designation: See page 8 for options

Series 43

Non-Cavity Filled Sanitary

Automated Model numbers

4-Way Double Acting

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	43-C1-050/2R2D-XX-(*)	1/2"	43-C1-050/2R2D-XX-(*)
3/4"	43-C1-075/2R2D-XX-(*)	3/4"	43-C1-075/2R3D-XX-(*)
1"	43-C1-100/2R2D-XX-(*)	1"	43-C1-100/2R3D-XX-(*)
1-1/2"	43-C1-150/2R4D-XX-(*)	1-1/2"	43-C1-150/2R4D-XX-(*)
2"	43-C1-200/2R5D-XX-(*)	2"	43-C1-200/2R5D-XX-(*)
2-1/2"	43-C1-250/2R5D-XX-(*)	2-1/2"	43-C1-250/2R6D-XX-(*)
3"	43-C1-300/2R6D-XX-(*)	3"	43-C1-300/2R7D-XX-(*)
4"	43-C1-400/2R7D-XX-(*)	4"	43-C1-400/2R8D-XX-(*)

4-Way Spring Return

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	43-C1-050/2R2S-XX-(*)	1/2"	43-C1-050/2R3S-XX-(*)
3/4"	43-C1-075/2R3S-XX-(*)	3/4"	43-C1-075/2R4S-XX-(*)
1"	43-C1-100/2R4S-XX-(*)	1"	43-C1-100/2R4S-XX-(*)
1-1/2"	43-C1-150/2R6S-XX-(*)	1-1/2"	43-C1-150/2R6S-XX-(*)
2"	43-C1-200/2R6S-XX-(*)	2"	43-C1-200/2R7S-XX-(*)
2-1/2"	43-C1-250/2R6S-XX-(*)	2-1/2"	43-C1-250/2R7S-XX-(*)
3"	43-C1-300/2R8S-XX-(*)	3"	43-C1-300/2R8S-XX-(*)
4"	43-C1-400/2R9S-XX-(*)	4"	43-C1-400/2R0S-XX-(*)

4-Way Electric

On-Off		Modulating	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	43-C1-050/WEA1-XX-(*)	1/2"	43-C1-050/WEA2-XX-(*)
3/4"	43-C1-075/WEA1-XX-(*)	3/4"	43-C1-075/WEA2-XX-(*)
1"	43-C1-100/WEA1-XX-(*)	1"	43-C1-100/WEA2-XX-(*)
1-1/2"	43-C1-150/WEC1-XX-(*)	1-1/2"	43-C1-150/WEC2-XX-(*)
2"	43-C1-200/WED1-XX-(*)	2"	43-C1-200/WED2-XX-(*)
2-1/2"	43-C1-250/WEE1-XX-(*)	2-1/2"	43-C1-250/WEE2-XX-(*)
3"	43-C1-300/WEE1-XX-(*)	3"	43-C1-300/WEE2-XX-(*)
4"	43-C1-400/WEF1-XX-(*)	4"	43-C1-400/WEF2-XX-(*)

* Port Arrangement designation: See page 8 for options

Series 43

Cavity Filled - Threaded, Socket Weld & Butt Weld

Automated Model numbers

4-Way Double Acting

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	43-TF-025/2R2D-XX-(*)	1/4"	CF
3/8"	43-TF-038/2R2D-XX-(*)	3/8"	CF
1/2"	43-TF-050/2R2D-XX-(*)	1/2"	CF
3/4"	43-TF-075/2R3D-XX-(*)	3/4"	CF
1"	43-TF-100/2R3D-XX-(*)	1"	CF
1-1/2"	43-TF-150/2R5D-XX-(*)	1-1/2"	CF
2"	43-TF-200/2R6D-XX-(*)	2"	CF
2-1/2"	43-TF-250/2R6D-XX-(*)	2-1/2"	CF
3"	43-TF-300/2R7D-XX-(*)	3"	CF
4"	43-TF-400/2R8D-XX-(*)	4"	CF

4-Way Spring Return

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	43-TF-025/2R3S-XX-(*)	1/4"	CF
3/8"	43-TF-038/2R3S-XX-(*)	3/8"	CF
1/2"	43-TF-050/2R3S-XX-(*)	1/2"	CF
3/4"	43-TF-075/2R4S-XX-(*)	3/4"	CF
1"	43-TF-100/2R5S-XX-(*)	1"	CF
1-1/2"	43-TF-150/2R7S-XX-(*)	1-1/2"	CF
2"	43-TF-200/2R8S-XX-(*)	2"	CF
2-1/2"	43-TF-250/2R8S-XX-(*)	2-1/2"	CF
3"	43-TF-300/2R9S-XX-(*)	3"	CF
4"	43-TF-400/2R0S-XX-(*)	4"	CF

4-Way Electric

On-Off		Modulating	
SIZE	MODEL	SIZE	MODEL
1/4"	43-TF-025/WEA1-XX-(*)	1/4"	43-TF-025/WEA2-XX-(*)
3/8"	43-TF-038/WEA1-XX-(*)	3/8"	43-TF-038/WEA2-XX-(*)
1/2"	43-TF-050/WEA1-XX-(*)	1/2"	43-TF-050/WEA2-XX-(*)
3/4"	43-TF-075/WEA1-XX-(*)	3/4"	43-TF-075/WEA2-XX-(*)
1"	43-TF-100/WEB1-XX-(*)	1"	43-TF-100/WEB2-XX-(*)
1-1/2"	43-TF-150/WED1-XX-(*)	1-1/2"	43-TF-150/WED2-XX-(*)
2"	43-TF-200/WEE1-XX-(*)	2"	43-TF-200/WEE2-XX-(*)
2-1/2"	43-TF-250/WEE1-XX-(*)	2-1/2"	43-TF-250/WEE2-XX-(*)
3"	43-TF-300/WEF1-XX-(*)	3"	43-TF-300/WEF2-XX-(*)
4"	43-TF-400/WEF1-XX-(*)	4"	43-TF-400/WEF2-XX-(*)

* Port Arrangement designation: See page 8 for options

Series 43

Cavity Filled Flanged - ANSI Class 150

Automated Model numbers

**4-Way
Double Acting**

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	43-FF-050/2R2D-XX-(*)	1/2"	CF
3/4"	43-FF-075/2R3D-XX-(*)	3/4"	CF
1"	43-FF-100/2R3D-XX-(*)	1"	CF
1-1/2"	43-FF-150/2R5D-XX-(*)	1-1/2"	CF
2"	43-FF-200/2R6D-XX-(*)	2"	CF
2-1/2"	43-FF-250/2R6D-XX-(*)	2-1/2"	CF
3"	43-FF-300/2R7D-XX-(*)	3"	CF
4"	43-FF-400/2R8D-XX-(*)	4"	CF

**4-Way
Spring Return**

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	43-FF-050/2R3S-XX-(*)	1/2"	CF
3/4"	43-FF-075/2R4S-XX-(*)	3/4"	CF
1"	43-FF-100/2R5S-XX-(*)	1"	CF
1-1/2"	43-FF-150/2R7S-XX-(*)	1-1/2"	CF
2"	43-FF-200/2R8S-XX-(*)	2"	CF
2-1/2"	43-FF-250/2R8S-XX-(*)	2-1/2"	CF
3"	43-FF-300/2R9S-XX-(*)	3"	CF
4"	43-FF-400/2R0S-XX-(*)	4"	CF

**4-Way
Electric**

On-Off		Modulating	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	43-FF-050/WEA1-XX-(*)	1/2"	43-FF-050/WEA2-XX-(*)
3/4"	43-FF-075/WEA1-XX-(*)	3/4"	43-FF-075/WEA2-XX-(*)
1"	43-FF-100/WEB1-XX-(*)	1"	43-FF-100/WEB2-XX-(*)
1-1/2"	43-FF-150/WED1-XX-(*)	1-1/2"	43-FF-150/WED-XX-(*)
2"	43-FF-200/WEE1-XX-(*)	2"	43-FF-200/WEE2-XX-(*)
2-1/2"	43-FF-250/WEE1-XX-(*)	2-1/2"	43-FF-250/WEE2-XX-(*)
3"	43-FF-300/WEF1-XX-(*)	3"	43-FF-300/WEF2-XX-(*)
4"	43-FF-400/WEF1-XX-(*)	4"	43-FF-400/WEF2-XX-(*)

* Port Arrangement designation: See page 8 for options

Series 43

Cavity Filled Sanitary

Automated Model numbers

4-Way Double Acting

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	43-CF-050/2R2D-XX-(*)	1/2"	CF
3/4"	43-CF-075/2R3D-XX-(*)	3/4"	CF
1"	43-CF-100/2R3D-XX-(*)	1"	CF
1-1/2"	43-CF-150/2R5D-XX-(*)	1-1/2"	CF
2"	43-CF-200/2R6D-XX-(*)	2"	CF
2-1/2"	43-CF-250/2R6D-XX-(*)	2-1/2"	CF
3"	43-CF-300/2R7D-XX-(*)	3"	CF
4"	43-CF-400/2R8D-XX-(*)	4"	CF

4-Way Spring Return

Sized for 80 PSI		Sized for 60 PSI	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	43-CF-050/2R3S-XX-(*)	1/2"	CF
3/4"	43-CF-075/2R4S-XX-(*)	3/4"	CF
1"	43-CF-100/2R5S-XX-(*)	1"	CF
1-1/2"	43-CF-150/2R7S-XX-(*)	1-1/2"	CF
2"	43-CF-200/2R8S-XX-(*)	2"	CF
2-1/2"	43-CF-250/2R8S-XX-(*)	2-1/2"	CF
3"	43-CF-300/2R9S-XX-(*)	3"	CF
4"	43-CF-400/2R0S-XX-(*)	4"	CF

4-Way Electric

On-Off		Modulating	
SIZE	MODEL	SIZE	MODEL
1/4"	N/A	1/4"	N/A
3/8"	N/A	3/8"	N/A
1/2"	43-CF-050/WEA1-XX-(*)	1/2"	43-CF-050/WEA2-XX-(*)
3/4"	43-CF-075/WEA1-XX-(*)	3/4"	43-CF-075/WEA2-XX-(*)
1"	43-CF-100/WEB1-XX-(*)	1"	43-CF-100/WEB2-XX-(*)
1-1/2"	43-CF-150/WED1-XX-(*)	1-1/2"	43-CF-150/WED2-XX-(*)
2"	43-CF-200/WEE1-XX-(*)	2"	43-CF-200/WEE2-XX-(*)
2-1/2"	43-CF-250/WEE1-XX-(*)	2-1/2"	43-CF-250/WEE2-XX-(*)
3"	43-CF-300/WEF1-XX-(*)	3"	43-CF-300/WEF2-XX-(*)
4"	43-CF-400/WEF1-XX-(*)	4"	43-CF-400/WEF2-XX-(*)

* Port Arrangement designation: See page 8 for options

Valve Options

Various Seat Materials

PTFE, RTFE, 50/50 STFE, 25% CTFE, Delrin, PEEK, UHMWPE, TFM-1600

Operator Options

Quarter-turn Gear Operators
Spring Return "Deadman" Handles
Oval handles, TEE Handles

Specials and Solutions

Steam Jackets
Stem Extensions
V-ported Control Valves
Multi-port Valve Solutions
Fugitive Emissions Bonnets (TSM's)
Oxygen Cleaning
Lockout Brackets
Vented Balls
"No Play" Mounting Kits

• FM Approved Valves and Assemblies



Manual and automated valve assemblies for gas burner management applications and safety shutoff

Other Products

Special Seats Balls and Seal Designs



Steam Jacketed Valves



Floor Mounted Damper Drives



Limit Switches Mounted on Manual Valves



Fusible Link Assemblies



180° Actuators



Lockout Mounting Kits



Stem Extensions



Special Multi-Port Valves



Dual Valve Assemblies



TERMS AND CONDITIONS

Terms:

Net thirty (30) days from date of invoice, unless otherwise stated.

Prices:

All prices are F.O.B. Seller's plant Cincinnati, Ohio and do not include any applicable Federal, State and Local Sales or Excise Taxes or other surcharges unless otherwise specifically indicated. All prices subject to change without notice.

Payments:

Remittance should be made to

A-T Controls, Inc.
P.O. Box 934100
Atlanta, GA 31193-4100

unless otherwise stated. If the financial condition or credit of the Buyer at any time shall, in the judgment of the Seller, not warrant shipment of products ordered, the Seller may at its option require full payment prior to shipment or refuse to ship and terminate any order outstanding without liability to Buyer.

Design:

The Seller or the Seller's manufacturers reserve the right to make design improvements without notice.

Warranty:

The Seller warrants its product against defects in material or workmanship, when used on those services approved by the Seller, for a period of one (1) year from the date of original shipment. The Seller's liability under this warranty shall be limited to repair or replacement at Seller's option of such defective products,

F.O.B. factory, upon proof of defect satisfactory to Seller. Seller shall have no further liability for damages of any kind, including but not limited to personal injuries and property damage, resulting from use of Seller's product. This warranty is expressly in lieu of all other warranties, either expressed or implied, including any implied warranty or merchantability or fitness for any particular purpose.

Disclaimer:

Due to continuous product improvements, we reserve the right to modify or change design without incurring any liability to furnish or install such modifications or changes on products previously or subsequently sold.

Returns:

No goods may be returned without Seller's or Seller's manufacturers written permission. In issuing credit for such shipments, Seller reserves the right to deduct a minimum handling charge of 25%.

Claims:

All claims for corrections or deductions must be made within ten (10) days after delivery of goods

Cancellations:

The Buyer may cancel upon the written consent of the Seller's manufacturers but the Seller is entitled to reasonable cancellation charges including but not limited to labor expended, materials, obtained or expended, reasonable overhead expenses.

Shipment and Delivery:

Shipment dates are based on the Seller's best estimate only. The Seller will exercise his best efforts to ship on schedule, but shall not be liable for any damages or loss caused by any delay in delivery, including but not limited to delay caused by strikes, flood, fires, accidents, inability to obtain sufficient materials or products from suppliers, inability to obtain sufficient labor, or any legislative, administrative or executive law, order or requisition of the Federal Government or any State or Municipal Government or any subdivision, department or office thereof. The responsibility for goods lost or damaged in transit rests with the carrier.

Modifications or Additions of Terms and Conditions:

No modification of, addition to, or waiver of any of the terms and conditions stated here in shall be binding upon the Seller, except by the written consent of an authorized officer of the Seller.

Acceptance:

Any order by Buyer placed pursuant to a quotation is subject to acceptance and acknowledgement by Seller or the Seller's manufacturers. If Buyer accepts any portion of the merchandise ordered, he will be deemed to have assented to the terms and conditions stated herein.



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SERIES 33/43/53 Multi-Port Ball Valves



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